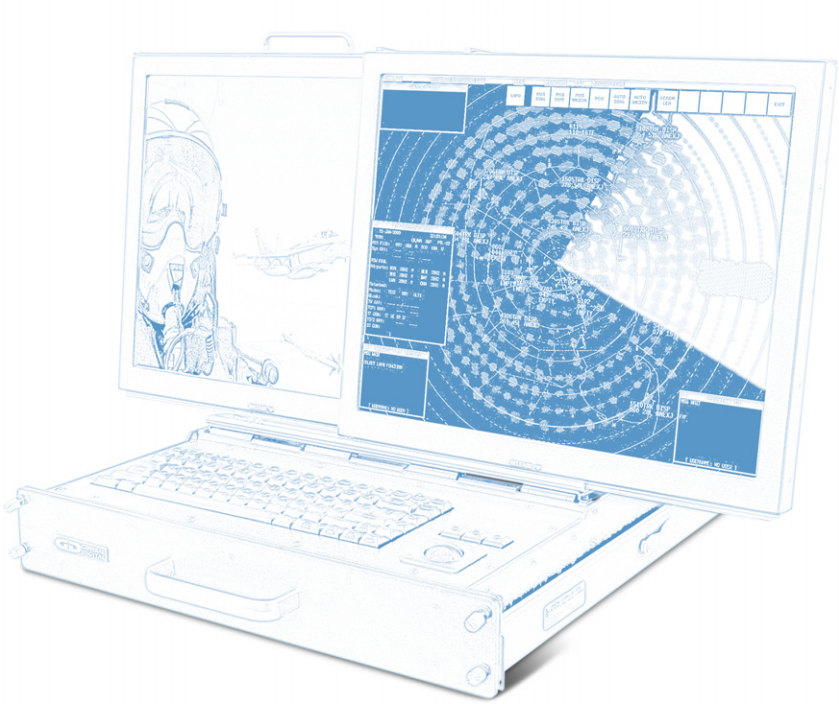
# User's Manual

## TwoView™
## TwoView Solar™

Rack Mount Dual LCD Monitor w/Integral Keyboard & Pointing Device
in Standard Luminance and Daylight / Sunlight Readable Luminance

TV / DTV / STV Series



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Revision 0.0

GENERAL DIGITAL™
*The Innovators of Flat Panel Technology*

## Please take a moment...

...to record the following information in the space provided below. Should the need arise to contact General Digital™ regarding your LCD monitor, this information will help us to better serve you. You will find the model number/serial number label affixed to the rear of your monitor.

Model Number: _____

Serial Number: _____

Date Received: _____

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General Digital™ Corporation components should not be used in medical devices with life support functions, safety equipment (or similar applications where component failure would result in loss of life or physical harm), aerospace equipment, telecommunication equipment (trunk lines) or nuclear power control equipment. Contact a General Digital™ representative before using General Digital™ devices for any applications other than those recommended by General Digital™. General Digital™ assumes no responsibility for any damage resulting from the use of a General Digital™ device which does not comply with the instructions and precautions specified in this manual.

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## Installation

General Digital™ recommends that you install or leave the monitor:

- In a place free of extreme temperatures, i.e., away from radiators, heating vents, direct sunlight.
- In a place free of mechanical vibration and shock.
- In a place far from any equipment that generates a strong magnetic field.
- In a place free of inordinate amounts of dust, dirt or sand, i.e., an open window or outdoor exit. If setting up temporarily in an outdoor environment, be sure to take adequate precautions against airborne dust and dirt.
- On a stable surface where the monitor will be safe from tipping over.
- Ensure that vents are kept free of obstruction and airflow remains unrestricted at all times.
- If the unit is equipped with a grounded AC line input connector, ensure that a reliable grounding path is maintained. Units so equipped are intended to be connected to ground.
- Ensure that the unit is located where the temperature remains within the recommended ambient temperature range listed in the Specifications.

## Characteristics of the LCD Screens

- Keep the LCDs from facing direct sunlight for extended periods as this can damage the screens.
- The LCD screens may lose uniformity or otherwise malfunction if pushed, scratched or have a heavy object set upon them.
- If the monitors are used in a cold place, a residual image may appear on the screens. This is not a malfunction. The screens return to normal as the temperature rises to a normal operating level.
- If a still picture is displayed for a long time, a residual image may appear for a while. The residual image will eventually disappear.
- The LCD panels become warm during operation. This is not a malfunction.

**Important Notes on the LCD Screen Characteristics**

*Please be aware that, although the LCD screens are made with high precision technology, the manufacturer's specifications allow for slight optical anomalies. If your LCD screens exhibit any minor anomalies, it is not an indication of a malfunction. General Digital™ inspects each screen to even more rigid specifications than the manufacturer's and will not ship any product found to be substandard.*

*Also, optimal performance is achieved after the monitor has reached a stable internal operating temperature. At ambient room temperature (72° F/22° C), this may require as long as 30–60 minutes.*

## Replacement of the Fluorescent Tube

A specially designed fluorescent tube is installed as the lighting apparatus for this monitor. If either screen becomes dark, unstable or does not turn on, replace the fluorescent tube with a new one. Consult General Digital™ when replacing the fluorescent tube.

## Maintenance

- Be sure to unplug the power cord from the power outlet before cleaning your monitor.
- Clean the LCD screens with a soft cloth. If you use a glass cleaning liquid, refrain from using any type of cleaner containing an antistatic solution or similar additive as this may scratch the LCD screens' coating.
- Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzine.
- A scratched LCD surface may result if the screen surface is rubbed, touched or tapped with sharp or abrasive items such as ballpoint pens or screwdrivers.
- Note that material deterioration or LCD screen coating degradation may occur if the monitor is exposed to volatile solvents such as insecticide, or if prolonged contact is maintained with rubber or vinyl materials.

## Transportation

- Disconnect all cables from the monitor and grasp the support and base sections of the display stand firmly with both hands when transporting. If you drop the monitor, you may be injured or the monitor may be damaged.
- When you transport this monitor for repair or shipment, use the original carton and packing materials. Failure to do so may void the warranty.

## Usage Recommendations

- When unused for extended periods of time, set your PC to DPMS. If using a screen saver, set it to the active screen mode.
- For each hour of looking at the monitor, let your eyes rest for 5 minutes. This will reduce eye fatigue.

## Disposal of the Monitor

**The fluorescent tube used in this monitor contains mercury. Disposal of this monitor must be carried out in accordance with the regulations of your local sanitation authority. Do not dispose of this monitor with general household waste.**

# Package Contents 6

Please take a moment to ensure that you have received the following items. Report any discrepancies immediately.

One (1) dual LCD monitor/keyboard model from one of the following model series:

| TwoView™ | TwoView Solar™ |
|---|---|
| TV-15X Series | DTV-15X Series |
| TV-17W Series | STV-15X Series |
| TV-19W Series | DTV-19W Series |

One (1) Documentation CD with **User's Manuals** and **LCD Monitor Calibration & Setup Guides** in PDF format; and Adobe® Acrobat® Reader software, which is used for viewing the documentation

One (1) AC Line Cord, 6'7" (unless a custom length is ordered)

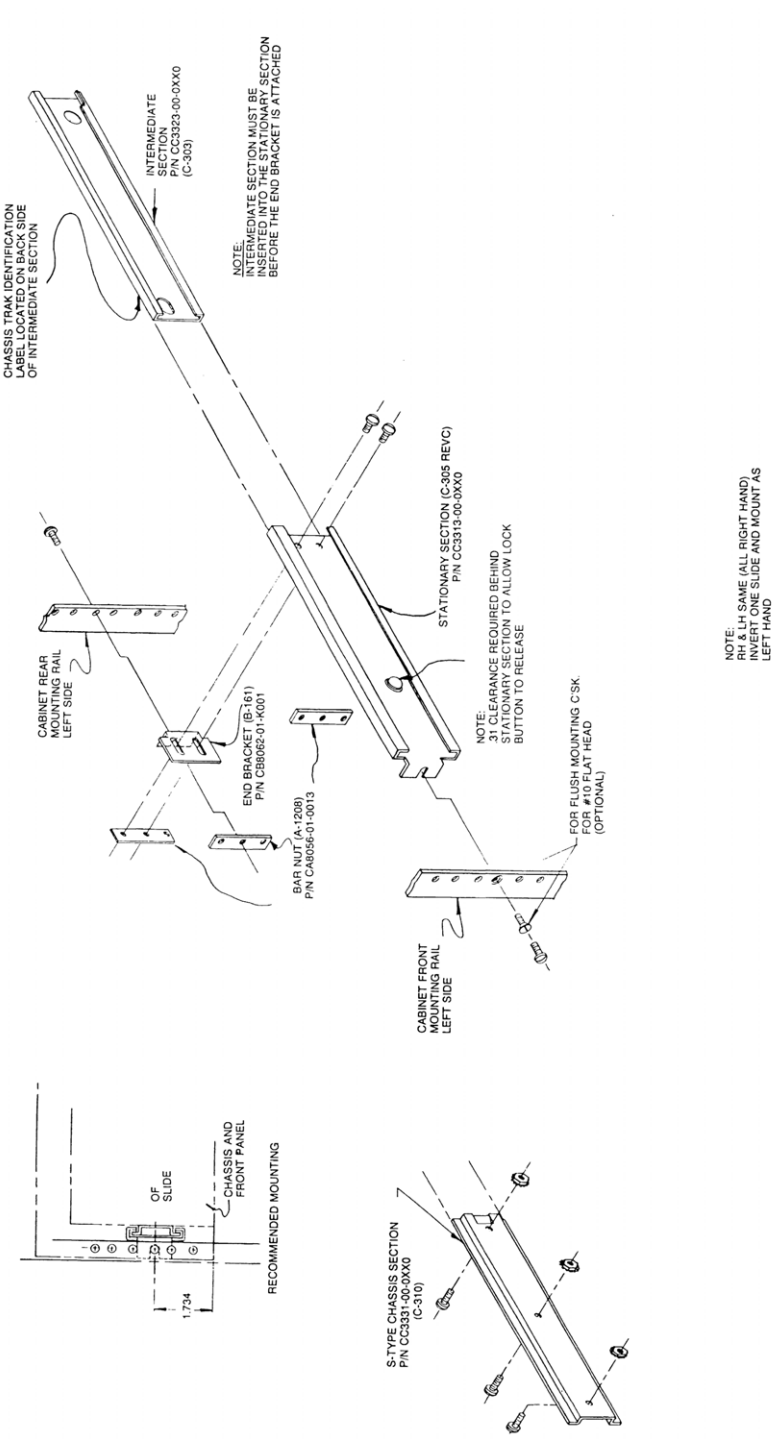
One (1) Shipping Container

Also included will be any options and/or accessories you ordered with your monitor. Please refer to the packing slip for a complete listing of items shipped.

**IMPORTANT!**
**Please save your custom-designed shipping container for warranty returns as needed. Shipping in an unauthorized container may void the warranty.**

## 19" Rack Mount

1) Attach *Stationary Section* of the rack slide to your 19" Rack Chassis (see drawing on following page).
2) Carefully align the *Slide Chassis* section of the rack slides (mounted to the LCD monitor) with the *Intermediate Section* and slide into place.
3) Attach the Keyboard/Mouse cable to the DE-9 connector located on the back of the unit.
4) Attach your video sources to the video input connectors located on the connector panel of the drawer (see **Connections**).
5) Attach your regulated +12 VDC source to the power connector located on the connector panel of the drawer (see **Connections**).
6) Lift up the display heads, slide the front display to the right, the rear display to the left, and position the angles of the displays for operation.
7) Power the Dual LCD Monitor/Keyboard by pressing the On/Off button located on the membrane keypad (left side of display enclosures).
8) Although factory-calibrated for optimal image quality, from time to time you may need to override the factory default settings of your monitor. To adjust the monitor settings, please refer to the **LCD Monitor Calibration & Setup Guide** for your unit.


TwoView™ / TwoView Solar™
Slide Assembly Instructions
GENERAL DIGITAL
CHASSIS TRAK IDENTIFICATION LABEL LOCATED ON BACK SIDE OF INTERMEDIATE SECTION
INTERMEDIATE SECTION P/N CC3323-00-0X0 (C-303)
NOTE: INTERMEDIATE SECTION MUST BE INSERTED INTO THE STATIONARY SECTION BEFORE THE END BRACKET IS ATTACHED
STATIONARY SECTION (C-305 REVC) P/N CC3313-00-0X0
CABINET REAR MOUNTING RAIL LEFT SIDE
END BRACKET (B-161) P/N CB8062-01-K001
BAR NUT (A-1208) P/N CA8056-01-0013
NOTE: .31 CLEARANCE REQUIRED BEHIND STATIONARY SECTION TO ALLOW LOCK BUTTON TO RELEASE
FOR FLUSH MOUNTING C'SK. FOR #10 FLAT HEAD (OPTIONAL)
CABINET FRONT MOUNTING RAIL LEFT SIDE
NOTE: RH & LH SAME (ALL RIGHT HAND) INVERT ONE SLIDE AND MOUNT AS LEFT HAND
OF SLIDE
CHASSIS AND FRONT PANEL
1.734
RECOMMENDED MOUNTING
S-TYPE CHASSIS SECTION P/N CC3331-00-0X0 (C-310)

General Digital's™ LCD monitors are equipped with several types of connectors to suit a variety of purposes. To reference the information about the connectors on your unit, simply match the connectors on your unit with the photos on these pages.

## DC Power Input Connector: 2-pin 2W2

| | Enclosure | Mating Connector |
|---|---|---|
| GD Part No.: | 30-660 | 30-659 |
| Manufacturer: | FCT Electronics | FCT Electronics |
| Manufacturer Part No.: | F2W2PC-K120 | F2W2SC-K121 |

30-660

30-659

| PIN NUMBER | SIGNAL |
|---|---|
| 1 (A1) | +12 VDC |
| 2 (A2) | Ground |

## VGA Input Connector: 15-pin High Density (x2)

| | Enclosure | Mating Connector |
|---|---|---|
| GD Part No.: | 30-238 | 30-239 |
| Manufacturer: | Amphenol (or equivalent) | Amphenol (or equivalent) |
| Manufacturer Part No.: | 17HD015SAA000 | 17HD015PAA000 |

30-238

30-239

| PIN NUMBER | SIGNAL |
|---|---|
| 1 | Red |
| 2 | Green |
| 3 | Blue |
| 4 | — |
| 5 | Ground |
| 6 | Red Return |
| 7 | Green Return |
| 8 | Blue Return |
| 9 | — |
| 10 | Ground |
| 11 | — |
| 12 | — |
| 13 | H Sync |
| 14 | V Sync |
| 15 | — |

## Serial/Touch Connector: 9-pin D-Sub.

| | Enclosure | Mating Connector |
|---|---|---|
| GD Part No.: | 30-045 | 30-026 |
| Manufacturer: | Amphenol | Amphenol |
| Manufacturer Part No.: | DE-9S | DE-9P |

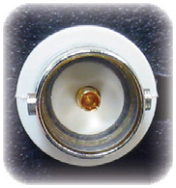
30-045

30-026

| PIN NUMBER | SIGNAL |
|---|---|
| 1 | DCD |
| 2 | RX |
| 3 | TX |
| 4 | DTR |
| 5 | Ground |
| 6 | DSR |
| 7 | RTS |
| 8 | CTS |
| 9 | RI |

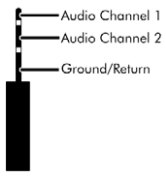
## NTSC Connector (Optional)

Generic 75 Ohm BNC Connector



## Audio Input Connector (Optional)

Generic 3.5 mm Stereo Jack



# Troubleshooting 11

| FAILURE | POSSIBLE CAUSE | SOLUTION |
|---|---|---|
| No Image | No Power | If the Green LED on the front bezel is illuminated, it indicates that the power supply is functional and connected properly. If the LED does not function properly, continue with the next set of instructions. |
| No Image | Defective AC Cable/ Connection | Verify that the power supply is properly connected to the LCD monitor and an AC power source (i.e., wall outlet). Inspect cable for physical damage. |
| No Image | Defective Power Supply | Verify that external power supply is functional. |
| No Image | No Signal; Incorrect Graphic Card Settings | Verify that a video signal of compatible resolution and refresh rate is being provided to the monitor. |
| No Image | Defective Display, Backlight Inverter or Internal Connection | Contact General Digital Service Department for a Return Material Authorization (RMA). |
| Dim Display | OSD Settings | Check Brightness and Contrast settings. If either setting is too low, the display will appear dim. |
| Dim Display | Half-life of Backlights Reached | Determine how many hours your monitor has been running. Backlights will be reduced to 50% original brightness after approximately 30,000 hours. Contact General Digital Service Department for a Return Material Authorization (RMA). |
| Flickering Pixels; Uneven Screen Intensity; Lack of Non-OSD Brightness Control | Defective LCD Panel or Internal Cable; Improper Pinout | If adjusting brightness control has no effect, the VR rating or method of adjusting brightness is not compatible or correctly connected to the inverter. Contact General Digital Service Department for a Return Material Authorization (RMA). |
| Vertical Bars; Flickering Pixels | Video Cable | Be sure that you are using a quality video cable. General Digital recommends a shielded three wire coax (R, G, B) with twisted pair for Hsync and Vsync. Replace the video cable. Ensure that your video source supports VESA standards. |
| Vertical Bars; Flickering Pixels | OSD Settings | Activate the OSD menu. Select the Auto Setup function. If this does not correct the problem, continue. Display a 50% gray pattern on the LCD display. If vertical bands are evident, activate the OSD menu. Adjust the Image Size function until the vertical bands vanish. Use the Tuning function to fine tune the image. |
| Vertical Bars | Quickly Cycling Power | After powering down the unit, wait for a minimum of 2 seconds before powering up. This gives the capacitor a chance to discharge. |

# Specifications



| | TV-15X-447 | DTV-15X-441 |
|---|---|---|
| Display Size (Diagonal) | 15.0" | 15.0" |
| Resolution (Pixels) | 1024 x 768 | 1024 x 768 |
| Colors | 16.7 Million | 16.7 Million |
| Luminance (Minimum) | 280 Nits | 500 Nits |
| Contrast* | 500:1 | 300:1 |
| Hor. Viewing Angle (Min.) | ±60° | ±60° |
| Vert. Viewing Angle (Min.) | +40°, -60° | +40°, -60° |
| Operating Temperature (Typ.) | 0°–50° C | 0°–50° C |
| Dimensions (H x W x D) | 3.50" (2U) x 19.00" x 24.00" | 3.50" (2U) x 19.00" x 24.00" |
| Weight (Operating) | 43 lbs. | 43 lbs. |
| Power Consumption (Typ.) | <60 Watts | <60 Watts |
| Input Voltage | +12 VDC @ 3.0 A | +12 VDC @ 3.0 A |

| | STV-15X-943 | TV-17W-507 |
|---|---|---|
| Display Size (Diagonal) | 15.0" | 17.0" |
| Resolution (Pixels)[1] | 1024 X 768 | 1280 x 1024 |
| Colors | 16.7 Million | 16.2 Million |
| Luminance (Minimum) | 1080 Nits | 300 Nits |
| Contrast[2] | 550:1 | 700:1 |
| Hor. Viewing Angle (Min.) | ±60° | ±75° |
| Vert. Viewing Angle (Min.) | +40°, -60° | +75°, -60° |
| Operating Temperature (Typ.) | 0°–50° C | 0°–50° C |
| Dimensions (H x W x D) | 3.50" (2U) x 19.00" x 24.00" | 3.50" (2U) x 19.00" x 24.00" |
| Weight (Operating) | 43 lbs. | 48 lbs. |
| Power Consumption (Max.) | <60 Watts | <70 Watts |
| Input Voltage | +12 VDC @ 3.0 A | +12 VDC @ 4.12 A |

**1** With scaling turned on, controller automatically scales subresolutions (below display resolution) to use as much of the active viewing area as possible. With the scaling feature turned off, subresolutions are displayed using actual pixel count, eliminating introduction of undesired artifacts; however, image will not use entire active area.

**2** Contrast values listed reflect ideal conditions. A variety of factors could result in reduced contrast.

Specifications subject to change without notice or obligation.

Values listed are for typical configurations. For complete specifications, please download the data sheet from our web site at http://www.GeneralDigital.com or inquire with a Sales Engineer.

| | TV-19W-702 | DTV-19W-963 |
|---|---|---|
| Display Size (Diagonal) | 19.0" | 19.0" |
| Resolution (Pixels) | 1280 x 1024 | 1280 x 1024 |
| Colors | 16.7 Million | 16.7 Million |
| Luminance (Minimum) | 250 Nits | 400 Nits |
| Contrast* | 600:1 | 600:1 |
| Hor. Viewing Angle (Min.) | ±85° | ±85° |
| Vert. Viewing Angle (Min.) | ±85° | ±85° |
| Operating Temperature (Typ.) | 0°–50° C | 0°–50° C |
| Dimensions (H x W x D) | 3.50" (2U) x 19.00" x 24.00" | 3.50" (2U) x 19.00" x 24.00" |
| Weight (Operating) | 50 lbs. | 50 lbs. |
| Power Consumption (Typ.) | <80 Watts | <80 Watts |
| Input Voltage | +12 VDC @ 4.57 A | +12 VDC @ 4.57 A |

**1** With scaling turned on, controller automatically scales subresolutions (below display resolution) to use as much of the active viewing area as possible. With the scaling feature turned off, subresolutions are displayed using actual pixel count, eliminating introduction of undesired artifacts; however, image will not use entire active area.

**2** Contrast values listed reflect ideal conditions. A variety of factors could result in reduced contrast.

Specifications subject to change without notice or obligation.

Values listed are for typical configurations. For complete specifications, please download the data sheet from our web site at http://www.GeneralDigital.com or inquire with a Sales Engineer.

# Options & Accessories 14

Though the most popular options and accessories are listed here, we have many others from which to choose. Please visit our web site at http://www.GeneralDigital.com or inquire with a Sales Engineer for details.

## LCD DISPLAY OVERLAY[1]

| | |
|---|---|
| 00 | None |
| 02 | Clear Float Glass, Antiglare Two Sides |
| 04 | Clear Float Glass, Antireflective Two Sides |
| 21 | Lexan Vandal Shield |
| 24 | Vandal Shield, Soda Lime Glass, Chemically Strengthened (Tempered), Antireflective Two Sides |

**1** Most common display overlays listed. Inquire with a Sales Engineer for other configurations.

## POWER SUPPLY

| TYPE | INPUT VOLTAGE | INPUT FREQUENCY | OUTPUT POWER | LINE ENTRY MODULE/FILTER | POWER FACTOR CORRECTION |
|---|---|---|---|---|---|
| Separate | 85–264 VAC | 47–63 Hz | 75 Watts/+12 VDC | — | 0.95 |
| Separate | 90–264 VAC | 50–60 Hz | 100 Watts/+12 VDC | — | — |
| None | +12 VDC | | Filtering and regulation supplied by customer | | |

## KEYBOARD/POINTING DEVICE[2]

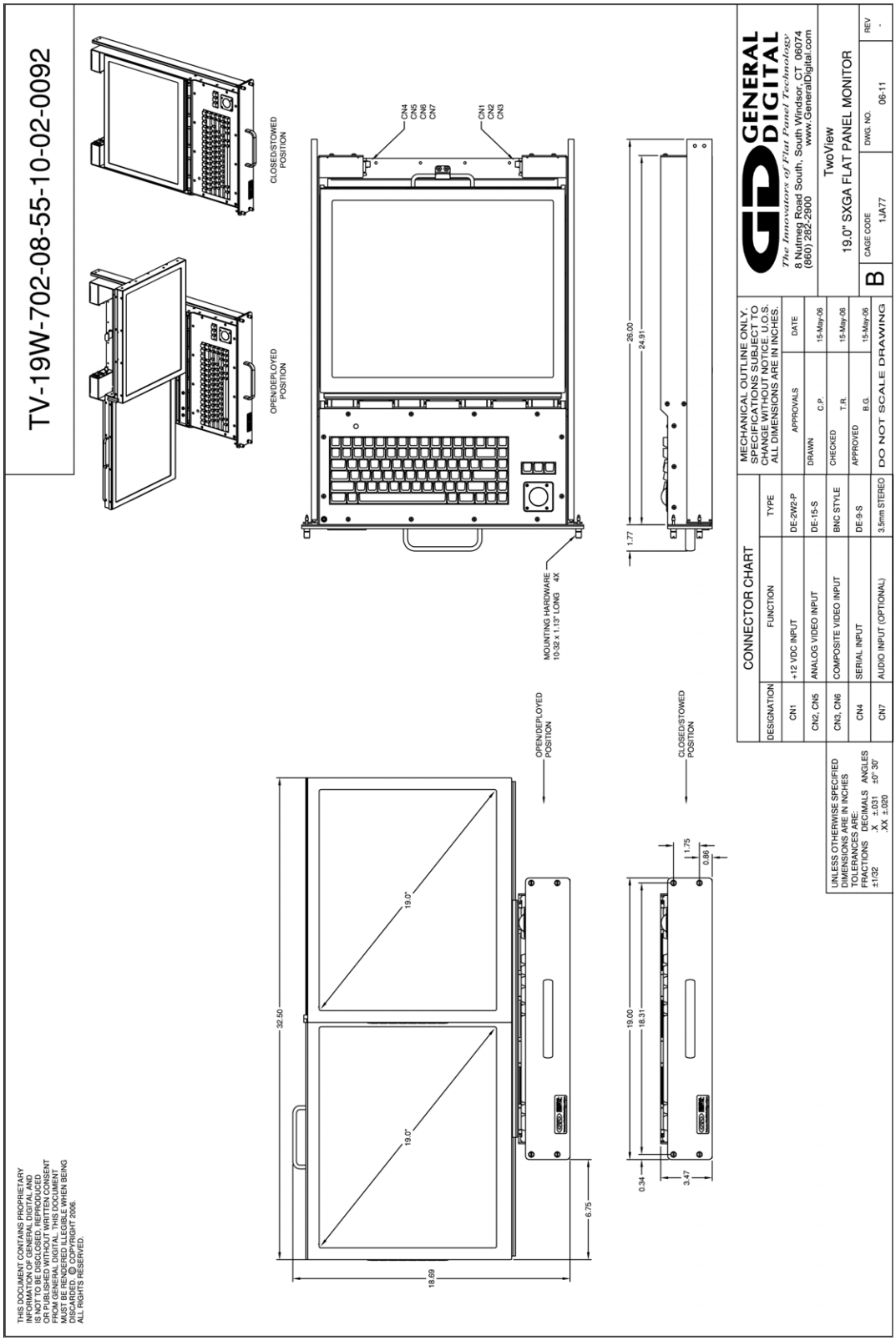
| MODEL | GRADE | KEYBOARD ENCLOSURE | KEYBOARD | | | POINTING DEVICE | |
|---|---|---|---|---|---|---|---|
| | | | Number of Keys | Compatibility | Special Features | Type | Compatibility |
| 51 | Heavy-Duty Industrial | Metal | 82 | PS/2 | — | 1-3/8" Trackball/ 3 Mouse Buttons | PS/2 |
| 52 | Heavy-Duty Industrial | Metal | 82 | PS/2 | Backlit Keys | 1-3/8" Trackball/ 3 Mouse Buttons | PS/2 |
| 53 | Heavy-Duty Industrial | Metal | 82 | Sun Type 5 (8-pin Mini-DIN) | — | 1-3/8" Trackball/ 3 Mouse Buttons | Sun Type 5 (8-pin Mini-DIN) |
| 54 | Heavy-Duty Industrial | Metal | 82 | Sun Type 5 (8-pin Mini-DIN) | Backlit Keys | 1-3/8" Trackball/ 3 Mouse Buttons | Sun Type 5 (8-pin Mini-DIN) |
| 55 | Military[3] | Metal | 82 | PS/2 | Backlit Keys | 1-3/8" Trackball/ 3 Mouse Buttons | PS/2 |
| 57 | Military[3] | Metal | 82 | Sun Type 6 (USB) | Backlit Keys | 1-3/8" Trackball/ 3 Mouse Buttons | Sun Type 6 (USB) |
| 58 | Military[3] | Metal | 82 | PC USB | Backlit Keys | 1-3/8" Trackball/ 3 Mouse Buttons | PC USB |
| 59 | Military[3] | Metal | 82 | Sun Type 5 (8-pin Mini-DIN) | Backlit Keys | 1-3/8" Trackball/ 3 Mouse Buttons | Sun Type 5 (8-pin Mini-DIN) |
| 60 | Heavy-Duty Industrial | Metal | 82 | Sun Type 6 (USB) | Black Keycaps | 1-3/8" Trackball/ 3 Mouse Buttons | Sun Type 6 (USB) |
| 64 | Heavy-Duty Industrial | Metal | 82 | PC USB | Black Keycaps | 1-3/8" Trackball/ 3 Mouse Buttons | PC USB |

**2** All keyboard electronics, switch activators, optical pick-ups, bearings, and connectors are protected against dirt, dust, liquid and general contamination.

**3** Certified for MIL-STD-810F: Sand/Dust, Salt/Fog, Spill/Rain, Shock (30g), Vibration (1g, 4–33 Hz).

# Mechanical Drawing





# GENERAL DIGITAL™ CORPORATION

(hereinafter Seller)

## STANDARD TERMS AND CONDITIONS OF SALES

**1.** Acknowledgment and acceptance of any order by seller is expressly limited to and made conditional upon the terms and conditions contained herein. Any of the buyer's terms and conditions which are in addition to or different from those contained herein and which are not separately agreed to in writing (except additional provisions specifying quality, character of the products ordered, and shipping instructions) are hereby objected to and shall be of no effect. The buyer shall be deemed to have assented to all terms and conditions contained herein if any part of the products described herein is accepted.

**2. ENTIRE AGREEMENT.** This instrument contains the entire and only agreement between the parties hereto relating to the subject matter hereof, and any representation, affirmation of fact, and course of prior dealings, promise or condition in connection, therewith, or usage of the trade not incorporated herein, shall not be binding on either party. The rights and obligations contained herein shall inure to and be bind upon the parties, their legal representatives, successors, and permitted assigns.

**3. WARRANTY.** Seller warrants that upon delivery to the Buyer, the product sold thereunder shall be free of defects in materials and workmanship and that such product shall substantially conform to the specifications provided by Seller. This Warranty commences on the date of delivery to the Buyer unless another time for commencement has been negotiated between Seller and Buyer prior to such delivery. Should the product be delivered through a third party (UPS, USPS, Federal Express, etc.) the warranty period shall commence on the date that such third party receives the product unless another time for commencement has been negotiated between Seller and Buyer prior to such delivery. The duration of the Warranty shall be one (1) year from the date of delivery as set forth above. This Warranty shall be effective only if Seller receives notice of such defects in materials and workmanship during the period of the Warranty stated above. After Seller receives such notice, Buyer shall obtain a Return Material Authorization (hereafter RMA) number. To obtain an RMA number, Buyer shall contact Seller's Customer Service Department, with the model number(s), serial number(s), and original purchase order number(s) of the product or products. Buyer shall include a brief description of the problem or failure mode experienced. Buyer shall mark the outside of the package containing the product or products, conspicuously, with the letters RMA and the number assigned by Seller. Any packaged returned without RMA and the RMA number clearly visible will be rejected at Seller's receiving dock. After Buyer has provided notice and obtained the appropriate RMA number, Buyer shall return the product, upon request, to General Digital™ Corporation, 8 Nutmeg Road South, South Windsor, CT 06074, not later than thirty (30) days after Seller's receipt of notice of the alleged problem or failure mode. Buyer shall prepay all transportation charges for return of the product(s) to Seller. Seller shall pay for the cost of sending the product(s) back to Buyer. Transportation charges to Buyer shall be deemed Best Way and any other transportation charges shall be at the Buyer's cost. All costs of customs clearance, shipping, and any other related charges for transportation outside of the contiguous 48 United States shall be at the Buyer's expense. After Buyer's compliance, Seller shall, at Seller's option, repair or replace the product(s). Excluded from this Warranty are all problems or failures resulting from:

- Improper or inadequate maintenance of the product by the Buyer.
- Unauthorized modification of the product by any means.
- Operation of the product outside its environmental specifications.
- Neglect, misuse, or abuse of the product.
- Modification or integration with other components not covered by a Seller warranty when such integration increases the likelihood of problems, failures, or damage.

Further, this warranty is between seller and buyer only, and does not extend to buyer's customers or users of buyer's products. In addition, and in the event that buyer integrates seller's product with components manufactured or supplied by any other company, this warranty shall only relate to defects in materials and workmanship of seller's product and not to problems with or failures of seller's product caused by other components integrated with it. Seller's rendering of technical advise and/or assistance or Seller's performance of service work in connection with Buyer's order of the product(s) shall not change or enhance this warranty in any way. Buyer's reliance on Seller's skill or judgment to select or furnish suitable goods shall be at Buyer's risk. Seller shall not be liable for any direct, indirect, special incidental, or consequential damages including, but not limited to, loss of profits and/or destruction of other property, caused by any application of the product(s) and/or its integration with other components. Seller's liability shall be limited to the amount paid by the Buyer for the product(s). The aforementioned remedies are in lieu of and exclude all others. Buyer assumes all other risks and liabilities for loss, damages or injury, whether or not caused by Seller's negligence, to persons or property and arising out of, connected with, or resulting from, the use of Seller's products or services either alone or in combination with other products or services. Seller specifically excludes any and all other warranties, written or oral, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose.

**4. SPECIAL PRODUCTS.** The following provisions are to be considered a part of all Special Product Acknowledgments and Orders. Special Product orders are those calling for products not contained in Seller's current catalog and price list, or those requiring modifications to catalog products or those requiring sample, environmental, mechanical or life testing, 100% reliability screening, quality conformance qualifications, or any combination thereof. These provisions supersede any part of the other clauses relating to the same project.

**A.** Delivery dates are best estimates only and are subject to (1) Receipt by Seller of order and negotiated specifications containing, where applicable, all quoted waivers and/or exceptions, (2) successful, first time passage of products submitted to electrical performance test, to environmental and/or life test processing required by applicable specifications.

**B.** Seller assumes no responsibility for, refund or replacement of products shipped at the Buyer's request prior to successful completion of acceptance and/or qualification test performed by Seller, except those subject only to Buyer's incoming visual inspection.

**5. PATENTS.** Seller shall defend any suit or proceeding which is based on a claim that any products or part thereof, furnished under this contract constitutes an infringement of any valid United States patent, if notified promptly in writing and given authority, information and assistance for the defense or settlement of same. In case said product, or part thereof, is in such suit held to constitute infringement and the use of said product or part is enjoined, then Seller shall at its own

expense and at its option, either procure for the Buyer the right to continue using said product or part, or replace same with non-infringing comparable products, or modify it so it becomes non-infringing, or refund the purchase price thereof. The forgoing states the entire liability of Seller for patent infringement by said product or part thereof.

**6. TERMS OF PAYMENT.** Payment terms for sales within the USA are Net Thirty (30) days from date of shipment. International sales require a Letter of Credit on a US Bank prior to shipment from Seller.

**7. TITLE AND DELIVERY**. All shipments within the 48 contiguous United States by Seller shall be F.O.B. point of shipment. Title to hardware products and risk of loss pass to Buyer upon delivery to carrier at shipping point. Buyer shall pay all transportation and storage charges. Seller will select the carrier if Buyer does not. Claims for shortages must be made with Ten (10) days after receipt of the order.

**8. CONTINGENCIES.** Seller shall not be responsible for any failure to perform due to unforeseen circumstances or to causes beyond its control. Examples of such causes are acts of God, War, Riot, Embargoes, Acts of Civil or Military Authorities, Fire, Floods, Accidents, Strikes or Shortages of Transportation, Facilities, Fuel, Energy, Labor or Materials. Seller may defer delivery for a period equal to the delay caused by such contingency.

**9. CANCELLATION.**
**A. Default.** If Buyer defaults, Seller may decline to make further shipments and/or may terminate Buyer's order without affecting Seller's rights and remedies including, but not limited to, any right to cancellation and bill-back charges. If Seller continues to make shipments after Buyer default, action shall not constitute a waiver nor affect Seller's legal remedies.

**B. Cancellation: Standard Products.** Buyer is responsible for one hundred percent (100%) payment if any order scheduled for delivery within thirty (30) days is canceled. Upon written notice to Seller, Buyer may cancel any order for standard products scheduled for shipment beyond thirty (30) days after Seller receives Buyer's cancellation notice. Buyer shall be liable for any applicable bill-back charges resulting from such cancellation. Buyer shall also pay, as a rescheduling/ restocking charge, twenty-five percent (25%) of the price specified on order sheet for each canceled product unless Buyer reschedules the order for delivery within one hundred twenty days (120) days.

**C. Cancellation: Custom Products.** If Buyer cancels orders for products containing d esign, markings, packaging or other specifications unique to Buyer, Buyer shall pay the following cancellation charges in addition to any applicable bill-back charges.

| Percentage of Purchase Price to be Paid Upon Cancellation Notice | Number of Days Before Scheduled Delivery that Written Cancellation is Received |
|---|---|
| 100 | 0-30 |
| 75 | 31-60 |
| 50 | 61-90 |
| 20 | 91-120 |

**10. SEVERABILITY.** In case any one or more of the provisions or parts of a provision contained in this agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect ay other provision or part of a provision of this agreement but this agreement shall be construed as if such invalid, illegal or unenforceable provision or part of a provision had never been contained herein.

**11. ARBITRATION.** Any controversy or claim arising out of or relating to this agreement shall, at the option of either party, be settled by arbitration in accordance with the rules of American Arbitration Association. Provided, however that in the event of a violation of the provisions of paragraph 13, General Digital shall be entitled to injunctive or other relief to enforce its rights under this agreement without prejudice to its rights under this paragraph. Such injunctive or equitable relief shall not preclude the award of monetary damages, if appropriate. The parties acknowledge that, by agreeing to this provision, each waives its right to a jury trial in exchange for a quicker and less expensive method of resolving any dispute concerning this agreement or anything relating thereto.

**12. CONTROLLING LAW.** This Agreement shall be governed by, subject to, and construed according to the laws of the State of Connecticut. For purposes of applying to Connecticut law, this Agreement shall be deemed to have entered into and wholly performed in Connecticut. Buyer warrants, and it is a condition of this acknowledgment, that Buyer has complied, and will continue to comply with applicable laws, regulations, and order of the United States Government, and of any state or political subdivision thereof, including all statutes, regulations, and directives that are applicable to Buyer's purchase thereunder. Without limiting the foregoing, Buyer further warrants that they have complied with all applicable provisions of the Fair Labor Standards Act of 1938, as amended; and all regulations and orders issued by the US Department of Labor, as well as US export regulations including, but not limited to, the International Trafficking and Arms Regulations (ITAR). Buyer further agrees to defend, indemnify and hold Seller harmless from and against claims, losses, damages, costs and expenses that may be sustained by reason of Buyer's failure to meet any of the above requirements.

**13. PROPRIETARY RIGHTS AND CONFIDENTIALITY.**
**A.** Rights in any and all of Seller's information, know-how, trademarks, data, trade secrets, inventions, patents, plans, drawings, specifications, processes, designs, etc., whether or not acquired or reduced to practice during the course or as a result of this order, shall remain the property of Seller and Seller shall not be obligated to provide any of such property to Buyer. Buyer shall obtain no rights in any of such property and the price charged shall include no consideration for such property unless specifically so stated on the face of Seller's Standard Terms and Conditions of Sale. Listing as a separate line item and separately billing for Non-Recurring Engineering (Engineering Services) does not accrue to Buyer rights in any of the aforementioned property of Seller unless specifically stated on the face of Seller's Standard Terms and Conditions of Sale.

**B.** Buyer acknowledges that propriety property of Seller is a valuable business asset of Seller and that unauthorized use or disclosure of such would result in irreparable damage to Seller. Buyer agrees that it will:

- use proprietary information of Seller only for the purposes intended and necessitated by this order, not otherwise use or disclose any proprietary information of Seller without Seller's express informed written consent;
- take all reasonable precautions to insure protection against use or disclosure;
- and return, at Seller's request, all proprietary property of Seller which is in the possession or control of Buyer.

**C.** Any data, information, specifications, processes, drawings, designs, plans, know-how, etc. of Buyer supplied to Seller in conjunction with this order must be considered free from proprietary restrictions unless expressly agreed otherwise in writing signed by and authorized by an officer of General Digital™ Corporation.

We want you to be completely satisfied with your product. Please feel welcome to contact us should you require any of our services.

General Digital™ Corporation
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## Sales

Phone: 860.282.2900, Option 1
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E-mail: gd_mn@GeneralDigital.com

## Service

Phone: 860.282.2900, Option 4
Fax: 860.282.0198
E-mail: service@GeneralDigital.com

In your correspondence with the Service Department, please provide the following information:

- Company name
- Company address
- Contact name
- Contact phone and fax numbers

You can expect to receive a reply within one business day.